

CLAIMS

1. Watch with a metallic case including an electronic module (14) for storing data, which is housed at least mostly in a cavity (13) open towards the exterior in an external surface of the watch, said cavity being of complementary shape to said 5 module, said module being able to communicate via broadcast signals with a read and/or write apparatus (35) for said data, said module including a base (15) on which are mounted an integrated circuit chip (24) having at least two bumps (26) and a coil (23) acting as a transmission and/or reception antenna, said coil being formed by an electrically conductive wire having two ends (29) respectively connected to said 10 bumps of said integrated circuit chip, said coil surrounding a space in which said chip is placed, characterized in that the base of the electronic module (14) is a metallic element that conducts magnetic flux to insulate the module coil magnetically from the metallic case during data communication between a read/write apparatus and said module, and in that said module (14) and said cavity (13) that is open towards the 15 exterior housing said module define means for quickly and precisely positioning a complementary-shaped head (35) of a read and/or write apparatus.

2. Watch according to claim 1, characterized in that the base of the module is made of pure iron or a material including a nickel, iron, copper and molybdenum alloy, the alloy being composed particularly of 70 to 80% nickel and 10 to 20% iron.

20 3. Watch according to claim 1, characterized in that said cavity (13) and said module (14) have an essentially cylindrical shape and are located substantially in the centre of the back cover (3) of said case (1).

25 4. Watch according to any of claims 1 to 3, characterized in that said base (15) is dome-shaped and has a flat bottom (16) onto which said coil (23) of annular shape and said integrated circuit chip (24) are placed and a lateral wall (27) surrounding said coil, the height of the lateral wall counted from the inner surface of the flat bottom being greater than or equal to the thickness of the coil or the chip, and in that the base is housed in a cavity (13) of an external surface of the watch between the inner surface of the cavity and the coil.

30 5. Watch according to claim 1, characterized in that the electronic module includes a protective cover (28) having a bottom and a circular lateral wall (17), said cover being placed on said bottom to enclose the coil and the integrated circuit chip via said base (15), in that said cover is made of plastic or ceramic material or sapphire, in that the lateral wall (17) of the cover is fixed mostly inside said cavity, the 35 bottom of said cover projecting in part outside said cavity, and in that said module (14)

is secured by setting in said protective cover (28) into said cavity (13) or by bonding in said cavity (13) or by crimping in said cavity (13).

6. Watch according to claim 5, characterized in that the thickness of said lateral wall (17) of the cover slightly and continuously increases from its base to its top
5 so as to have an external surface (18) able to cooperate with a complementary-shaped inner wall (19) of said cavity (13) in order to form dovetail type assembly means between said electronic module (14) and the cavity in the watch surface.

7. Watch according to claim 5, characterized in that said lateral wall (17) of the cover (28) has a cylindrical external surface (18) and said cavity (13) has an inner
10 wall (19) that is also cylindrical.

8. Watch according to any of claims 1 to 3 and 5, characterized in that said base (15) is formed by a substantially circular rigid plate on which are fixed said annular-shaped coil (23) and said integrated circuit chip (24), said base being positioned between the external watch surface and the coil.

15 9. Watch according to claim 1, characterized in that said coil (23) and said integrated circuit chip (24) are directly secured by bonding onto said base (15) and in that said ends (29) of the coil wire are also directly fixed onto said bumps (26) of the integrated circuit chip by means of an electrically conductive material.

10. Watch according to claim 1, characterized in that said coil (23) and said
20 integrated circuit chip (24) are fixed onto the substrate of a printed circuit (38), and in that said printed circuit has two connection bumps (40) located between said coil and said chip, onto which said ends (29) of said coil wire are fixed and two ends of two conductive wires (41) whose other ends are fixed onto said bumps (26) of said chip.

11. Watch according to claim 1, characterized in that said module (14)
25 housed in the cavity has a part projecting outside the back cover (3) of said case (1) to define means for quickly and precisely positioning a complementary-shaped head (35) of a read and/or write apparatus.

12. Electronic module (14) for a watch according to any of the preceding claims, the module including a base (15) on which are mounted an integrated circuit
30 chip (24) having at least two bumps (26) and a coil (23) acting as a transmission and/or reception antenna, said coil being formed by an electrically conductive wire having two ends (29) respectively connected to said bumps of said integrated circuit chip, said coil surrounding a space in which said chip is placed, characterized in that the base is a metallic element that conducts magnetic flux to act as a magnetic shield.

35 13. Module according to claim 12, characterized in that it includes a protective cover (28) placed on said base to enclose the coil and the integrated circuit

chip using said base (15), said cover being made of plastic or ceramic material, or sapphire.